DOCUMENT RESUME

ED 260 118 TM 850 444

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TITLE Relationship of Teacher Attitude to the Environment of His/Her Class.
PUB DATE 85
NOTE 19p.; Paper presented at the Annual Meeting of the American Educational Research Association (69th, Chicago, IL, March 31-April 4, 1985).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; Attitude Measures; *Classroom Environment; Educational Environment; Factor Analysis; Factor Structure; Foreign Countries; Predictive Measurement; Secondary Education; Student Attitudes; Student Behavior; *Teacher Attitudes
IDENTIFIERS Canada; *Learning Environment Inventory; *Minnesota Teacher Attitude Inventory

ABSTRACT

The relationship between a teacher's attitude and the environment of his or her class was examined. The research was designed to determine the effects of the learning environment on the academic achievements of students. This research measured teacher attitudes with the Minnesota Teacher Attitude Inventory (MTAI). Students' perceptions of the learning environment were measured by the Learning Environment Inventory (LEI). Data collected from 414 secondary school teachers and their students were factor-analyzed. The study revealed that a relationship does exist between teacher attitude and the learning environment of his or her class. It was found that authoritarian, pessimistic, repressing, reproachful evaluations of the students by the teacher will create friction, favoritism, and dissatisfaction in the class. This negative classroom environment will reduce learning in most areas. (DWH)

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RELATIONSHIP OF TEACHER ATTITUDE TO THE ENVIRONMENT OF HIS/HER CLASS

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Relationship of teacher attitude
to the environment of his/her class

The hypothesis to be tested in this research was: Do the attitudes of a teacher are related to the learning environment of his/her class and in turn related to the academic achievement of the students of his/her class? Data were collected for 414 secondary school teachers and for their classes. The results do indicate that there is a relationship between teacher attitude and the learning environment of his/her class. Authoritarian pessimistic, repressing, reproachful evaluations of students by the teacher, will create friction, favouritism and dissatisfaction in the class. This type of class environment will reduce learning in various subject areas.

Relationship of teacher attitude to the environment of his/her class[1]

During recent years environmental variables have been studied as potential predictors of academic achievement (Walberg and Anderson, 1972). Based on Getzels and Thelen's (1960) theoretical model of the class as a social system, Walberg (1969b) constructed the Learning Environment Inventory (LEI) for assessing a student's perception of the learning environment. Bhushan (1979) translated the LEI to the French language and provided different forms of evidence regarding its validity within a French culture. He concluded that the LEI is a valid instrument for predicting academic achievement in various subjects as are IQ tests.

Recently, Bloom (1976) and his students have done research which has led to the view that most students become very similar with regard to learning ability, rate of learning, and motivation for further learning when provided with favourable learning conditions. On the contrary, when the students are provided with unfavourable learning conditions they become even more dissimilar with regard to learning ability, rate of learning, and motivation for further learning. Therefore, to improve the academic achievement of a class, it is necessary to improve the learning climate of the class. But before one can do this, it is essential to identify the elements which influence the learning environment.

It is believed that a teacher is a key figure in the kind of relationship that prevails in his/her classroom. It is also true that

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1 Paper presented at the annual Meeting of the American Educational Research Association, held March 31 - April 4, 1985, in Chicago.

the teacher's attitudes resulting from his/her life experience will have a noticeable effect on the kind of relationships which this teacher creates in his/her classroom. Therefore, there is a need for research which can demonstrate a relationship of the teacher's attitudes to his/her class environment.

The Minnesota Teacher Attitude Inventory (MTAI) developed by Cook, Leeds, and Callis (1951) is the most popular and as shown in various researches it is best indicant of teachers' attitudes toward students. Callis (1953) conducted a study to test the efficienty of the MTAI for predicting interpersonal relations in the classroom. He found that the MTAI can predict the kind of interpersonal relations which will exist in the classroom about as well as one can predict academic performance by use of intelligence tests. To find out the dimensions of teacher attitudes as measured by MTAI, Yee and Fruchter (1971) conducted a factor analysis and came up with five significant factors. Bhushan (1974) validated the French version of MTAI.

This research was conducted to demonstrate a relationship between teacher attitudes as measured by MTAI and his/her students perception of the learning environment as measured by LEI. Furthermore, an attempt was made to identify those attitudes which improve the learning environment as evidenced in earlier studies.

METHOD

Sample

The data were collected for three years from 1979 to 1981. In the first year, a random sample of 23 secondary high schools, representing different regions of the province of Quebec, was taken. For each school, a particular day and time at which most of the students of secondary IV and V had their French and Mathematics, were selected. The LEI was administered to these students in their respective classes. At the same time the teachers of these classes answered the MTAI. The data collection continued till the end of March 1979. Complete data were available for 67 classes of Mathematics and 86 classes of French. All the answer sheets were verified to make sure that all the information was complete and only one answer was selected. The responses of 153 teachers were punched on IBM cards. The answer sheets of 4431 students were read by the optic scoring.

In the second year, another random sample of secondary high schools was selected and the data were collected for 39 classes of Physics and 35 classes of Biology.

In the third year of the experiment, the data were collected for 78 classes of History, 82 classes of Geography and 27 classes of Economics. The total number of classes for this research was 414, this is the same as the total number of teachers in the study.

Instrument

As described by its authors the LEI scales are concerned with the relationships of students to one another, to the organizational properties of the class, to class activities and to the physical environment. Each of the scales consists of seven statements descriptive of high school classes. The respondent expresses the extent of his/her agreement or disagreement with each item on a 4-point scale. For each of the 15 scales, the mean response on the seven items was calculated for each student. Moreover, the mean of the ratings of all students was determined to provide an estimate of the collective student perception of the classroom environment.

For the MTAI, a new logical scoring key suggested by Yee and Kriewall (1969) was used. This key provides a five-step set of weights per item for the range from most favourable to least favourable response, i.e. +2, +1, 0, -1, -2. The authors claim that the new key was found to provide slightly higher internal consistency, equivalent validity with pupils' and principals' ratings used as criteria and a frequency distribution that was not significantly skewed with a greater spread of extreme scores than the original key.

Data Analysis

The responses to the 150 items of the MTAI were factor-analysed using the principal components analysis. First four factors which had significant loadings were orthogonaly rotated, involving the varimax solution. Factor scores were obtained corresponding to the four factors

for each teacher. BMDP4M Computer program was used for this purpose. Using 15 scale means of the LEI as dependent variables and four factor scores of the MTAI as independent variables, multivariate multiple regression analysis was done. The purpose and procedure of multivariate multiple regression analysis is described by Bock (1975, p. 375), the computer program Multivariance developed by Finn (1977) does this kind of analysis.

RESULTS AND DISCUSSION

Four significant factors of the MTAI explain 21.4% of the total variance. Items with factor loadings of .39 or greater were included in a factor. The level of .39 was chosen since this is the minimum value at which the items did not overlap on the scales except items 35, 50, 76 and 126 which were common to Factors I and IV.

Factor I accounts for the largest proportion of the extracted variance, that is, 13.35% of the total variance of the test and contains 22 items. With 8 items in common, it resembles Yee and Fruchter's (1971) Factor III which was named "Rigidity and Severity in Handling Pupils."[1] This factor refers to attitude of teachers toward the proper handling of students behaviour. Items of this factor prescribe the manner in which teachers should handle pupils with specific references, especially to obedience in the application of school rules. Therefore, Factor I was named as "Rigidity and Severity in Applying School Rules".

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1. For sample items in a factor, the readers are requested to read Yee and Fruchter's article.

Factor II explains 3.5% of the total variance and contains 21 items. It has 9 items in common with Yee and Fruchter's Factor II which had 15 items and was titled "Conflict between Teachers' and Pupils' Interests". This factor expresses an attitude dimension toward students' capacity and willingness to work cooperatively with teachers in planning, fulfilling, and evaluating classroom work. According to the statements loaded on the factor, teacher-pupil relationships are not mutually interactive but should be directed from teacher to pupil. Factor II was named the same as Yee and Fruchter's Factor II, that is, "Conflict between Teachers' and Pupils' Interests". Agreement with Factor II items suggests a fundamental disrespect for students' natural behaviour and thinking and desire to subordinate pupil interest and inclinations to a strict subject-centered curriculum and authoritarian teacher expectations. In disagreeing with Factor II items, teachers would reflect more modern instructional views which hold pupils' interests, motivation, and open interaction with teachers basic to effective teaching-learning strategies.

Factor III has 5 items and explains 2.43% of the total variance. All the five items of this factor are found in Yee and Fruchter's Factor IV and V which were titled "Pupils' Independence in Learning" and "Pupils' Acquiescence to the Teacher", respectively. Factor III describes an attitude that concern facilitating pupils' interests and achievement in learning activities. Agreeing to the statements of this factor may concern greater pupil freedom and self-direction which extends from and is facilitated by teacher involvement and help rather than teacher apathy and indifference. Thus, Factor III was named as "Pupils' Independence in Learning Activities".

Factor IV contains 19 items and accounts for 1.95% of the total variance. It has 14 items in common with Yee and Fruchter's Factor I which was titled "Children's Irresponsible Tendencies and Lack of Self-Discipline". There is an overall negativism in the statements loaded on this factor which suggests, if favoured, authoritarian, pessimistic, repressing, reproachful evaluations of students. Disagreement with the statements of the factor would imply a permissive, accepting, warm, sympathetic, supportive attitude toward students. Being very similar to Yee and Fruchter's Factor I, Factor IV was also named as "Students' Irresponsible Tendencies and Lack of Self-Discipline".

Four independent variables, that is, the four factors of the MTAI predicted significantly 15 dependent variables, that is, the 15 scales of the LEI. F - value for test of hypothesis of no association between dependent and independent variables was $F(60,1544) = 1.63$, $p < .002$. Multiple correlations of the four independent variables with Formality, Speed, Friction, Favouritism, Satisfaction, Disorganization, Apathy and Democratic respectively were also significant. It indicates that the attitudes of the teachers are correlated separately with eight variables of the environment of their classes. To analyse the contribution of each independent variable in the prediction of each dependent variable, stepwise step-down regression analyses were done. The results are given in table 1.

Factor I, that is, "Rigidity and Severity in Applying School Rules", predicted significantly Formality and Cliqueness. Step-down Fs for these two variables were also significant. Factor I had a positive correlation with Formality and a negative correlation with Cliqueness.

Table 1. Step-Wise regression to analyze the contribution of each independent variable

Independent Variable	Dependent Variables	Univariate F	** p<	Step Down F	p<	% of additional Variance Accounted for
Factor I	3.* Formality	7.83	0.005	8.08	0.005	1.87
	9. Cliqueness	5.04	0.02	4.77	0.03	1.21
Factor II	4. Speed	7.08	0.008	6.87	0.009	1.69
	5. Environment	5.15	0.02	2.04	0.15	1.24
	7. Goal-Direction	7.19	0.008	3.17	0.07	1.72
	8. Favouritism	8.51	0.004	3.48	0.06	2.03
	10. Satisfaction	9.64	0.002	0.30	0.58	2.29
	11. Disorganization	10.25	0.001	2.87	0.09	2.43
	14. Democratic	5.30	0.022	1.01	0.31	1.27
Factor III	6. Friction	4.13	0.04	5.38	0.02	0.99
	13. Apathy	9.38	0.002	14.55	0.002	2.23
	14. Democratic	5.31	0.02	2.36	0.12	1.26
Factor IV	6. Friction	7.69	0.006	7.13	0.008	1.82
	8. Favouritism	6.97	0.009	3.18	0.07	1.63
	10. Satisfaction	3.78	0.05	2.70	0.10	0.89
	11. Disorganization	7.57	0.006	1.28	0.26	1.76

* The number before the variable indicates its position in the regression equation.

** Only significant results are reported

The scale Formality explains the behaviour within the class which is guided by formal rules and it reveals something about the behavioural norms of the group. Walberg (1969a) had indicated that large classes are considered more formal than are small classes and the increase in formality is most prominent when the size increases above 30. Mathematics classes tended to be the most informal (Anderson, 1970a, Shaw and MacKinnon, 1973) when compared to classes in science, humanities and languages. Shaw and MacKinnon reported higher Formality in classes where behaviour objectives had been introduced. Bhushan (1979) found that Formality is a valid predictor of achievement in English.

Cliques, or subgroups within a class can lead to hostility among members of various parts of the class. These cliques offer protection to those who are failures in the group at large and provide alternate norms which presumably lead to less than optimal group productivity. However, in some instances, cliques can be positive in orientation and lead to increased learning for certain pupils (Anderson, 1979b). Anderson, Walberg and Welch (1969) found Cliqueness to be higher in traditional courses than in Harvard Project Physics classes. In his study, Bhushan (1979) showed that Cliqueness was a valid predictor of achievement in Chemistry and Mathematics.

According to the description of the independent variable Factor I and the dependent variables Formality and Cliqueness, and the correlations between them, it seems that if a teacher believes in strict discipline, the environment of his/her class will be formal and there will be fewer

cliques in the class. Consequently, there will be some increased learning in certain subject areas.

Factor II, that is "Conflict between Teachers' and Pupils' Interests", predicted significantly Speed, Environment, Goal-Direction, Favouritism, Satisfaction, Disorganization and Democratic. The step-down Fs of Speed, Goal-Direction, Favouritism and Disorganization only were significant at 0.009, 0.07, 0.06 and 0.09 levels of significance respectively.

Speed presumes that the rate of progress of the class should ideally be matched to the characteristics of individual pupils within it. The individual student's perception of how fast the teacher covers the work tells us something about the student; the class rating of speed should tell us something about how well the teacher is able to communicate with and adapt to the needs of the group. Speed was negatively correlated with the mean IQ scores in the class and classes in science and mathematics were considered as having a faster pace then those in English and History (Anderson, 1970b). Speed was a predictor of achievement in English (Bhushan, 1979). Faster the Speed perceived by the class, lower is the achievement. The Speed increases as the conflict between teachers' and pupils' interests increases.

Factor II had a positive correlation with Favouritism and Disorganization while it had negative correlation with Goal-Direction. Students in highly goal directed classes can be expected to reach the goal more often than students in classes where the goals are unspecified. Shaw and MacKinnon's (1973) study of mathematics classes showed a marked increase

in Goal-Direction scores in classes where behavioural objectives were specified in advance. Bhushan (1979) found that Goal-Direction was a good predictor of achievement in English, Geography and Mathematics. Favouritism scale might be used to indicate whether given pupils have a low academic self concept. In Bhushan's (1979) study Favouritism was a valid predictor of achievement in English. The extent to which pupils consider the class disorganized was related to the subject studied: Disorganization was highest in Mathematics classes (Anderson, 1970a). Furthermore, it has been consistently demonstrated that high Disorganization leads to a reduction in pupil learning (Anderson & Walberg, 1968; Walberg, 1969b). Disorganization was valid predictor of achievement in English, History and Mathematics (Bhushan, 1979). Therefore, as the conflict between teachers' and pupils' interests increases, the Speed scores increase, Goal-Direction scores decrease, Disorganization and Favouritism scores increase, and subsequently reduces in pupil learning.

Factor III, that is, "Pupils Independence in Learning Activities", predicted significantly Friction, Apathy and Democratic. Step-down Fs for Friction and Apathy only were significant. Factor III had a negative correlation with Friction as well as with Apathy. It means that as pupils' independence in learning activities increases, friction as well as apathy decreases. Apathy scale indicates whether individuals within the class feel no affinity with class activities. Apathy was a valid predictor of achievement in English and Physics (Bhushan, 1979). Friction was a valid predictor of achievement in Chemistry (Bhushan, 1979). Therefore, as pupils' independence in learning activities increases, pupil learning also increases.

Factor IV, that is, "Students' Irresponsible Tendencies and Lack of Self-Discipline", predicted significantly Friction, Favouritism, Satisfaction and Disorganization. Step-down F for Friction was significant at 0.008 level of significance while the Fs for Favouritism and Satisfaction were significant only at 0.07 and 0.10 levels respectively. Factor IV had positive correlations with Friction and Favouritism, and negative correlation with Satisfaction. Satisfaction indicates whether or not pupils like their class, which in turn can be expected to affect their learning. If students dislike the subject, the teacher, or their classmates, their frustrations may result in less than optimal performance. Satisfaction was a valid predictor of achievement in Chemistry and Mathematics (Bhushan, 1979). Therefore, if a teacher believes strongly in favour of authoritarian, pessimistic, repressing, reproachful evaluations of students, there will be more Friction and Favouritism, and less Satisfaction in his/her class. Consequently, there will be less learning in various subject areas.

CONCLUSION

The results do indicate that there is a relationship between teacher attitude and the learning environment of his/her class. If a teacher believes that there should be strict rules in handling the behaviour of the students, then the environment of his/her class will be formal and there will be fewer cliques in the class. This may lead to increased learning in certain subject areas. This could be true when the classroom rules are well defined and enforced strictly, everybody in the class is confident and clear about the results of these activities. Under these circumstances everybody will try to achieve the objectives underlying these rules and naturally will gain more.

If a teacher has a fundamental disrespect for students' natural behaviour and thinking and has a desire to subordinate pupil interest and authoritarian teacher expectations, then everybody in the class will feel that the teacher is going at a faster rate than their own, they will be disorganized and will feel that there is favouritism in the class, and they will also feel that there is no directed goal of the class. This kind of environment of the class will slow down the learning of various subject matter areas.

Teacher's belief in greater pupil freedom and self-direction which extends from and is facilitated by teacher involvement, will decrease friction as well as apathy in the classroom. This kind of environment of the class will result in increased learning of the class.

Authoritarian, pessimistic, repressing, reproachful evaluations of students by the teacher, will create friction, favouritism and dissatisfaction in the class. It will lead to less learning in various subject areas.

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